

Chang W-D, Wu J-H et al. Carpal Tunnel Syndrome Treated with a Diode Laser: A Controlled Treatment of the Transverse Carpal Ligament. Photomed Laser Surg 2008;25(6):551-557.

Design: Randomized clinical trial

Population/sample setting:

- 36 patients, 40 wrists (mean age 47) treated for carpal tunnel syndrome at a department of rehabilitation medicine in Taipei
- Eligibility criteria were a diagnosis of mild to moderate CTS for at least 1 year based on clinical and electrodiagnostic criteria: mild CTS had only sensory conduction changes; moderate had both sensory and motor, with sensory peak latency > 3.6 msec, and motor peak latency > 4.3 msec
- Exclusion criteria were previous surgery or laser therapy on the wrist, rheumatoid arthritis, metabolic disease, or stroke resulting in paralysis

Main outcome measures:

- Randomization to low level laser therapy (LLLT, n=20 wrists) or placebo LLLT (n=20 wrists)
- Active LLLT was administered 5 days a week for 2 weeks (10 sessions) at a wavelength of 830 nm ; placebo was administered in the same schedule
- Other treatment modalities (PT, orthotics, acupuncture) were not allowed during the 2 weeks of treatment
- Assessments were made at baseline, at the end of 2 weeks of treatment, and 2 weeks after the end of treatment
- Outcomes assessed were pain intensity, nerve conduction, hand and finger grip strength, symptom severity scale (11 questions), and functional status scale (8 questions)
- No significant changes were reported for nerve conduction for either group
- Grip strength improved in the LLLT group, but not in the placebo group, at the final follow-up 2 weeks after the end of treatment
- Pain on the VAS improved in the LLLT group, but not in the placebo group, at the end of treatment and 2 weeks after the end of treatment
- Symptom Severity Scale and Functional Status Scale scores improved in the LLLT group, but not in the placebo group, at the follow-up 2 weeks after the end of treatment

Authors' conclusions:

- LLLT effectively relieved pain and improved functional ability in patients with mild or moderate CTS, without adverse side effects

Comments:

- Some basic information is scant or lacking: the number of men and women, whether the randomization was done by wrist or by patient, what values of nerve conduction would have been considered "severe," and whether patients with bilateral disease had different treatments in the different wrists

- Description of randomization is also scant; “randomly divided” does not specify concealment of allocation
- Functional and symptom severity scales in Tables 4 and 5 do appear to have an advantage for the LLLT group; the grip strength changes do not appear to be very clinically significant
- The lack of effect on nerve conduction is probably not important, since this is of dubious use as a measure of response to treatment, especially in the short term

Assessment: Inadequate (actual group differences may be small; concealment of allocation not clear)